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REMARKS:Claims 1-12 and 16

The Examiner has rejected claims 1-12 and 16 under 35 USC 103 as being obvious over Mao 6,466,419 alone or in view of Pinarbasi (6,317,299) or Huai et al. (6,381,105).

With particular regard to claim 1, the Applicant respectfully asserts that claim 1 is novel over the prior art. Claim 1 recites a method of manufacturing a magnetic head wherein a PtMn layer is deposited by ion beam deposition and at least one of the AP pinned layer structure and free layer structure are formed by another method.

With regard to Mao, Column 1 of Mao refers to ion beam sputtering of a NiMn pinned spin valve. There is no mention of depositing a PtMn pinning layer by ion beam deposition.

With respect to Pinarbasi (299) Pinarbasi teaches that all of the layers of the sensor are deposited by ion beam desposition (eg. column 6, lines 33-39). There is no teaching or suggestion of ion beam deposition to construct the PtMn pinning layer and some other deposition method for the other layers of the sensor.

Furthermore, Huai et al. teaches that all of the layers of the sensor can be deposited by various deposition methods such as, "sputtering, ion beam deposition, or by evaporation". There is no suggestion that one deposition method would be advantageous over another. Nor is there any suggestion that ion beam deposition would provide any advantage when used to deposit a PtMn pinned layer nor that the other layers could be deposited by some other method.

The analysis of obviousness was set forth in *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966). In order to establish a *prima facie* case of obviousness, three basic criteria must be met:

First, there must be some *suggestion or motivation*, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the

teachings of the references. Second, there must be a *reasonable expectation of success*. Finally, the prior art reference or combined references must teach or suggest *all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art*, and not based on applicant's disclosure (*In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991; emphasis added).

There is no motivation in any of the references to form a magnetic head by depositing a pinning layer by ion beam deposition and then forming one or more of the other layers by another deposition method. Therefore, claim 1 is novel over all of the prior art. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). However, even if the references were combined, the references still do not teach the invention as recited in claim 1 wherein a magnetic head is constructed by ion beam deposition of the PtMn pinning layer and then depositing one or more other layers by some other method. Claim 1 is therefore patentable over the prior art.

Since claim 1 is allowable over the prior art, claims 1-12, which depend from claim 1 are necessarily also allowable over the prior art.

Claim 16 has been amended to include the limitation that one or both of the free layer and pinned layer are deposited by a method other than ion beam deposition. Claim 16 is, therefore, also allowable over the prior art for the reasons set forth with respect to claim 1.

New claim 19 has been added to recite that the ion beam deposition used to deposit the PtMn pinning layer is a ion assisted ion beam deposition. Support for this added claim 19 can be found on page 16 lines 3-13 and in Fig. 8. None of the references teaches the use of such an ion assisted ion beam deposition for depositing a PtMn pinned layer. New claim 19 is therefore, further allowable over the prior art.

For the reasons set forth above, the Applicant believes that the remaining claim in the present application are in condition for allowance. The Applicant therefore respectfully requests a notice of allowance.

In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 971-2573. For payment of any additional fees due in connection with the filing of this paper, the Commissioner is authorized to charge such fees to Deposit Account No. 50-2587 (Order No. HSJ920030150US1).

Respectfully submitted,

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